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Ames Research Center

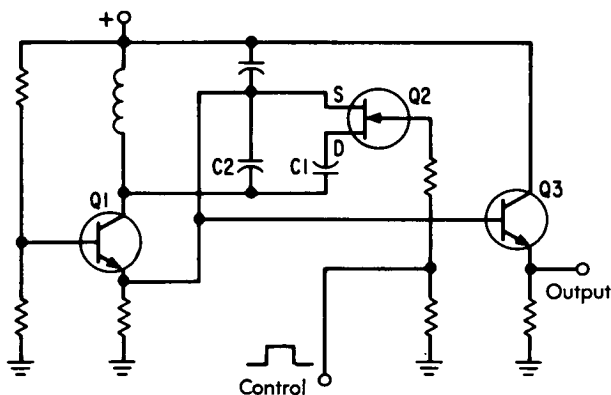


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Frequency Switch Keyed Oscillator

The problem:

To switch the frequency of an oscillator from one preset value to another on command.



The solution:

Change the resonant frequency of the LC tank circuit by shunting one of a pair of parallel capacitors.

How it's done:

The first stage of the circuit depicted in the diagram employs transistor Q1 as a Colpitts-type oscillator with capacitors C2 and C3 and an inductance providing the basic resonance frequency. Normally

C1 is isolated from the resonant circuit because the field effect transistor Q2 is nonconducting. However, when a digital control signal is provided, Q2 switches on and C1 is paralleled with C2; the oscillator now operates at a different frequency as long as the control signal is applied.

The oscillator is isolated from the load by the emitter follower Q3.

This technique may be useful in reducing the amount of hardware required to interrogate and control remote systems.

Note:

Requests for additional information may be directed to:

Technology Utilization Officer
Ames Research Center
Moffett Field, California 94035
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Patent status:

No patent action is contemplated by NASA.

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Category 01